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one or more target fluid flow channels in fluid communication with the one or more source fluid flow channels; and

one or more cross-channel areas at the intersection of each source fluid flow channel and each target fluid flow channel, wherein the source fluid flow channel crosses over the target fluid flow channel in an X fashion at the cross-channel area;

a porous membrane positioned in each cross-channel area separating the source fluid flow channels from the target fluid flow channels, ~~wherein the porous membrane is capable of passing at least one sample molecule from the source fluid flow channel to the target fluid flow channel;~~ and

a field-force/gradient mechanism proximate the porous membrane, wherein the field-force/gradient mechanism comprises an electric field configured to produce a fluid movement of a fluid from the source fluid flow channel to the target fluid flow channel via the porous membrane located in the cross-channel area.

23-28. (Cancelled)

29. (Original) The device of claim 22, further comprising a sensor.

30. (Original) The device of claim 29, wherein the porous membrane is the sensor.

31. (Original) The device of claim 22, further comprising a light source and a detector, the light source and the detector being focused at the cross-channel area.

32. (Original) The device of claim 22, wherein the thickness of the one or more porous membranes are between 0.01 and 50 micrometers.

33. (Original) The device of claim 22, wherein the one or more porous membranes are capable of fractionating molecules based on size, molecular weight, charges, chemical affinity, or other chemical/physical properties.



60. (New) The device of claim 22, wherein porous membrane comprises pores of a pore size between 50 angstroms and 10 micrometers.

62. (New) The device of claim 61, wherein the upper substrate member comprises a first cavity and the lower substrate member a second cavity, wherein porous membrane is located in a hallow space formed by the first and second cavities.

63. (New) The device of claim 22, further comprising a tagged molecule in the porous membrane, wherein the tagged molecule comprises a tag that is larger than the pore size.

64. (New) The device of claim 22, wherein each pair of the one or more source and target fluid channels has one source fluid flow channel that crosses over one target fluid flow channel at one cross-channel area.